

CLAIMS

1. A multicarrier transmitting apparatus comprising:
a dividing section that divides transmit data into
5 high-quality transmit data for which good quality is
required and ordinary transmit data other than said
high-quality transmit data;
a rearranging section that rearranges said transmit
data so that said high-quality transmit data is allocated
10 to a subcarrier in the vicinity of a center frequency;
and
an orthogonal frequency division multiplexing
section that performs orthogonal frequency division
multiplexing of said transmit data rearranged by said
15 rearranging section and allocates said transmit data to
subcarriers.
2. The multicarrier transmitting apparatus according
to claim 1, further comprising a spreading section that
20 performs spreading processing of said transmit data
rearranged by said rearranging section, wherein said
orthogonal frequency division multiplexing section
performs orthogonal frequency division multiplexing of
said transmit data that has undergone spreading
25 processing and allocates said transmit data to
subcarriers.
3. The multicarrier transmitting apparatus according

to claim 2, wherein said spreading section independently sets spreading ratios of said high-quality transmit data and said ordinary transmit data.

- 5 4. The multicarrier transmitting apparatus according to claim 2, wherein said spreading section makes a spreading ratio of said high-quality transmit data greater than a spreading ratio of said ordinary transmit data.

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5. The multicarrier transmitting apparatus according to claim 2, wherein code multiplexing numbers of said high-quality transmit data and said ordinary transmit data are set independently.

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6. The multicarrier transmitting apparatus according to claim 2, wherein a code multiplexing number of said high-quality transmit data is made smaller than a code multiplexing number of said ordinary transmit data.

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7. The multicarrier transmitting apparatus according to claim 2, wherein numbers of spreading codes assigned to said high-quality transmit data and said ordinary transmit data are set independently.

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8. The multicarrier transmitting apparatus according to claim 2, wherein a number of spreading codes assigned to said high-quality transmit data is made greater than

a number of spreading codes assigned to said ordinary transmit data.

9. The multicarrier transmitting apparatus according to claim 1, further comprising a modulation section that modulates said high-quality transmit data and said ordinary transmit data using independently set modulation methods.

10. The multicarrier transmitting apparatus according to claim 9, wherein said modulation section fixes a modulation method of either said high-quality transmit data or said ordinary transmit data, and adaptively changes a modulation method of the other of said high-quality transmit data or said ordinary transmit data.

11. The multicarrier transmitting apparatus according to claim 9, wherein said modulation section adaptively changes a modulation method of both said high-quality transmit data and said ordinary transmit data.

12. The multicarrier transmitting apparatus according to claim 9, wherein said modulation section selects a modulation method in accordance with an adjacent channel interference wave reception level.

13. The multicarrier transmitting apparatus according

to claim 1, further comprising an interleaving section that independently interleaves said high-quality transmit data and said ordinary transmit data, wherein said rearranging section rearranges said transmit data
5 after interleaving.

14. The multicarrier transmitting apparatus according to claim 1, wherein said rearranging section rearranges said transmit data so that said ordinary transmit data
10 is allocated to a subcarrier containing a DC point.

15. The multicarrier transmitting apparatus according to claim 1, further comprising a transmission power setting section that sets transmission power of said
15 high-quality transmit data higher than transmission power of said ordinary transmit data.

16. The multicarrier transmitting apparatus according to claim 15, wherein said transmission power setting
20 section sets transmission power of said high-quality transmit data and said ordinary transmit data variably.

17. The multicarrier transmitting apparatus according to claim 15, wherein said transmission power setting
25 section sets transmission power of either said high-quality transmit data or said ordinary transmit data variably.

18. The multicarrier transmitting apparatus according to claim 15, wherein said transmission power setting section varies transmission power in accordance with channel quality.

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19. The multicarrier transmitting apparatus according to claim 1, wherein said orthogonal frequency division multiplexing section narrows a range of subcarriers to which said high-quality transmit data is allocated when
10 an adjacent channel interference wave reception level increases.

20. The multicarrier transmitting apparatus according to claim 1, further comprising a coding section that
15 turbo-codes said transmit data, wherein said high-quality transmit data is systematic bit data and said ordinary transmit data is parity bit data.

21. The multicarrier transmitting apparatus according to claim 1, wherein said high-quality transmit data is
20 transmit data that is transmitted to a distant communicating party, and said ordinary transmit data is transmit data that is transmitted to a nearby communicating party.

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22. The multicarrier transmitting apparatus according to claim 1, wherein said high-quality transmit data is information used for communication control or

retransmission information.

23. The multicarrier transmitting apparatus according to claim 1, further comprising a selection section that
5 selects said ordinary transmit data so that subcarriers to which part of said ordinary transmit data rearranged by said rearranging section and said high-quality transmit data are allocated are transmitted.

10 24. The multicarrier transmitting apparatus according to claim 1, wherein said selection section selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is variable.

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25. The multicarrier transmitting apparatus according to claim 1, wherein said selection section selects said ordinary transmit data so that a number of subcarriers to which said ordinary transmit data is allocated that
20 are transmitted is variable according to channel quality.

26. The multicarrier transmitting apparatus according to claim 1, wherein said selection section selects said ordinary transmit data so that a number of subcarriers
25 to which said ordinary transmit data is allocated that are transmitted is variable based on delay distribution information of said transmit data.

27. The multicarrier transmitting apparatus according to claim 1, wherein said selection section selects said ordinary transmit data that is allocated to subcarriers of a predetermined reception level or higher.

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28. The multicarrier transmitting apparatus according to claim 1, wherein said selection section selects so that a number of subcarriers to which said ordinary transmit data is allocated that are transmitted is
10 variable in accordance with an adjacent channel interference wave reception level.

29. A base station apparatus that has a multicarrier transmitting apparatus comprising:

15 a dividing section that divides transmit data into high-quality transmit data for which good quality is required and ordinary transmit data other than said high-quality transmit data;

a rearranging section that rearranges said transmit
20 data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center frequency; and

an orthogonal frequency division multiplexing section that performs orthogonal frequency division
25 multiplexing of said transmit data rearranged by said rearranging section and allocates said transmit data to subcarriers.

30. A communication terminal apparatus that has a multicarrier transmitting apparatus comprising:

a dividing section that divides transmit data into high-quality transmit data for which good quality is required and ordinary transmit data other than said high-quality transmit data;

a rearranging section that rearranges said transmit data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center frequency; and

an orthogonal frequency division multiplexing section that performs orthogonal frequency division multiplexing of said transmit data rearranged by said rearranging section and allocates said transmit data to subcarriers.

31. A multicarrier transmitting method comprising:

a step of dividing transmit data into high-quality transmit data for which good quality is required and ordinary transmit data other than said high-quality transmit data;

a step of rearranging said transmit data so that said high-quality transmit data is allocated to a subcarrier in the vicinity of a center frequency; and

a step of performing orthogonal frequency division multiplexing of rearranged said transmit data and allocating said transmit data to subcarriers.

32. The multicarrier transmitting method according to claim 31, further comprising a step of spreading said transmit data.

5 33. The multicarrier transmitting method according to claim 31, further comprising a step of modulating said high-quality transmit data and said ordinary transmit data using independently set modulation methods.

10 34. The multicarrier transmitting method according to claim 33, further comprising a step of selecting a modulation method in accordance with an adjacent channel interference wave reception level.

15 35. The multicarrier transmitting method according to claim 31, wherein said high-quality transmit data is transmit data that is transmitted to a distant communicating party, and said ordinary transmit data is transmit data that is transmitted to a nearby
20 communicating party.

36. The multicarrier transmitting method according to claim 31, further comprising a step of independently interleaving said high-quality transmit data and said
25 ordinary transmit data.

37. The multicarrier transmitting method according to claim 31, wherein said ordinary transmit data is selected

so that subcarriers to which part of said ordinary transmit data rearranged by said rearranging section and said high-quality transmit data are allocated are transmitted.